Common Core Standards - Resource Page

The resources below have been created to assist teachers' understanding and to aid instruction of this standard.

Domain	Standard: 7.EE.3-1 - Solve multi-step real-life and mathematical problems posed with positive and negative rational numbers in any form (whole numbers, fractions, and decimals), using tools strategically.
Expressions and Equations **Solve real-life and mathematical problems using numerical and algebraic expressions and equations.**	Questions to Focus Learning How can using various tools help to solve real-life and mathematical problems with rational numbers? The properties of solving equations do not change when rational numbers are used and using tools can enable quick and accurate solutions to these equations. Student Friendly Objectives *Knowledge Targets* I know how to perform operations on all forms of rational numbers. *Reasoning Targets* I can use tools (e.g., calculator, graph paper, or tables) to solve problems. I can solve multi-step problems using positive and negative rational numbers. Vocabulary negative number positive number rational numbers

Teacher Tips

To assist students' assessment of the reasonableness of answers, especially problem situations involving fractional or decimal numbers, use whole-number approximations for the computation and then compare to the actual computation. Connections between performing the inverse operation and undoing the operations are appropriate here. It is appropriate to expect students to show the steps in their work. Students should be able to explain their thinking using the correct terminology for the properties and operations.

Continue to build on students' understanding and application of writing and solving one-step equations from a problem situation to a multi-step problem situation. This is also the context for students to practice using rational numbers including: integers, and positive and negative fractions, and decimals. As students analyze a situation, they need to identify what operation should be completed first, then the values for that computation. Each set of the needed operations and values is determined in order. Finally,an equation matching the order of operations is written. For example, Bonnie goes out to eat and buys a meal that costs $12.50 that includes a tax of $.75. She only wants to leave a tip based on the cost of the food. In this situation, students need to realize that the tax must be subtracted from the total cost before being multiplied by the percent of tip and then added back to obtain the final cost. $C = (12.50 - .75)(1 + T) + .75 = 11.75(1 + T) + .75$ where C = cost and T = tip.

Vertical Progression

8.EE.1 - Know and apply the properties of integer exponents to generate equivalent numerical expressions.
8.EE.2 - Use square root and cube root symbols to represent solutions to equations of the form $x^2 = p$ and $x^3 = p$, where p is a positive rational number. Evaluate square roots of small perfect squares and cube roots of small perfect cubes. Know that $\sqrt{2}$ is irrational.
8.EE.4-1 - Perform operations with numbers expressed in scientific notation, including problems where both decimal and scientific notation are used.
8.EE.7 - Solve linear equations in one variable.

The above information and more can be accessed for free on the Wiki-Teacher website.
Direct link for this standard: 7.EE.3-1